

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP03/08333

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> H01L21/322, H01L27/12, C30B29/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> H01L21/26-21/268, H01L21/322-21/326, H01L27/12,  
H01L21/205, C30B1/00-35/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2003  
Kokai Jitsuyo Shinan Koho 1971-2003 Jitsuyo Shinan Toroku Koho 1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	EP 1087041 A1 (SHIN-ETSU HANDOTAI CO., LTD.), 28 March, 2001 (28.03.01), Full text; Figs. 1 to 5 & WO 00/55397 A1 Full text; Figs. 1 to 5 & KR 1071250 A & US 6544656 B1	1-8, 10-17 9
Y A	BABICH, V.M. et al., 'Generation of thermal donors as a result of one- and two-step annealing of silicon crystals with large and small carbon concentraions', Semiconductors, Vol.30, No.5, May 1996, pages 417 to 419	1-8, 10-17 9

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

<p>* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&amp;" document member of the same patent family</p>
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Date of the actual completion of the international search  
30 September, 2003 (30.09.03)

Date of mailing of the international search report  
21 October, 2003 (21.10.03)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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PCT/JP03/08333

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KODATE, Jun'ichi et al., 'Suppression of Substrate Crosstalk in Mixed-Signal Complementary MOS Circuits Using High-Resistivity SIMOX (Separation by Implanted OXYgen) Wafers', Japanese Journal of Applied Physics, Part 1, Vol.39, No.4B, April 2000, pages 2256 to 2260	7, 14, 15
Y	JP 5-144827 A (Komatsu Electronic Metals Co., Ltd.), 11 June, 1993 (11.06.93), Full text; Figs. 1 to 3 & WO 93/10557 A1	13
A	WIJARANAKULA, W. et al., 'A Formation of Crystal Defects in Carbon-Doped Czochralski-Grown Silicon after a Three-Step Internal Gettering Anneal', Journal of Electrochemical Society, Vol.138, No.7, July 1991, pages 2153 to 2159	1-17
A	GAWORZEWSKI P. et al., 'Oxygen-Related Donors Formed at 600°C in Silicon in Dependence on Oxygen and Carbon Content', Phys.Stat.Sol.(a), Vol.77, No.2, 1983, pages 571 to 582	1-17